PHYSICS

Ether Drift Not Shown

The failure of a tiny mirror, half an inch in diameter, to turn a certain amount when Dr. Carl T. Chase, of the Norman Bridge Laboratory of Physics, Pasadena, was performing an experiment may prove to be strong evidence in support of Einstein's theory of relativity. It differs from results obtained by Dr. Dayton C. Miller which have been interpreted by authorities on the subject as antagonistic to Einstein's ideas.

In Dr. Chase's experiment, he repeated one performed by two English physicists about twenty years ago, and which was repeated in Germany within the last two years. According to the older ideas, which relativity has changed, all space is filled with a hypothetical medium called the ether, which is stationary, while the planets, including the earth, and other astronomical objects move through it. If this were the case and a small condenser, similar to that used in radio sets, were on the earth, moving through the ether, and were hung freely so that it could turn, the motion through the ether would tend to twist it. In the previous attempts, no such rotation was found, but the apparatus was not sufficiently free from friction to permit decisive results.

In Dr. Chase's apparatus, the condenser and the mirror are hung on a wire of phosphor-bronze a yard long and a two-thousandth of an inch in diameter. A duplicate of this wire, fastened at the bottom, provides the other connection, while the condenser itself is enclosed in a steel cylinder nine inches high, 3½ inches in diameter, with wall ⅝ of an inch thick. Long brass tubes from the top and bottom contain the supporting wires. The steel cylinder prevents heat currents within and electrical disturbances from without. The condenser was about an eighth of an inch thick, weighed about a third of an ounce and had a capacity of .04 microfarad.

To make the observations, readings had to be taken of the apparatus, by means of light reflected from the tiny mirror, every five minutes for twenty-four hours at a stretch. No evidence of any turning corresponding to a motion of the earth through the ether was found, says Dr. Chase, even though he has estimated his apparatus delicate enough to have detected a motion of 2½ miles a second, much less than the motion was supposed to be.

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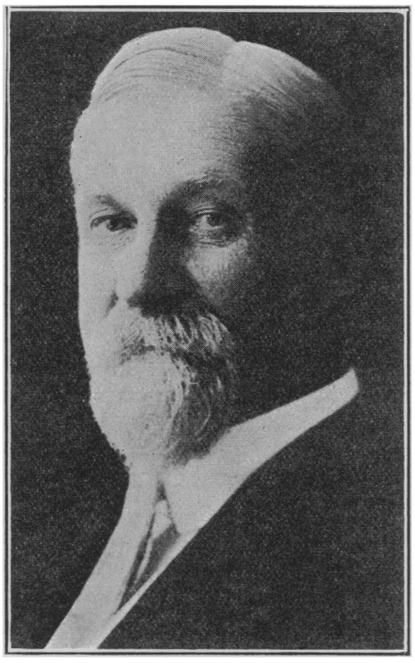
GEOLOGY



THOMAS CHROWDER CHAMBERLIN

A Modern Cosmologist

It has been given to very few men to compose cosmogonies. Six or eight thousand years ago there was a man in Mesopotamia who wrote the first one we know about, and one version of this survived as the standard account of the making of the universe until Laplace thought up one that agreed better with facts that had been learned in the meantime. Laplace belonged to the time of our great-grandparents. His theory was not so fortunate as that of his great unknown predecessor, for within our own time and in our own country arose a still newer theory that most geologists now agree fits the facts even better than did the Laplacian hypothesis.

T. C. Chamberlin, Emeritus Professor of Geology at the University of Chicago, who with Prof. F. R. Moulton gave to the world the planetesimal theory of its origin, has most fortunately multiplied his days, for he was eighty-three years old last month. His life has passed mainly in the beautiful country around Lake Michigan, for he was born in Mattoon, Illinois, and his early studies were conducted at Beloit College and the University of Michigan. His professional work kept him in Wisconsin most of the time until 1892, but when President Harper went out gathering giants for the then new University of Chicago he called Dr. Chamberlin to become head of his department of geology.

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ASTRONOMY

Comet Reappears

Giacobini's comet, which returns to the vicinity of the earth every six and two-thirds years, has come back again, according to Dr. Harlow Shapley, director of the Harvard College Observatory, and the place where it was found was very close to the position predicted for it more than a year ago by Dr. A. C. D. Crommelin, of the Royal Observatory, Greenwich, England. The difference between the predicted and the observed place of the comet was about the diameter of the full moon.

According to the word received by Dr. Shapley from the International Bureau of Astronomical Telegrams at Copenhagen, Denmark, the comet was discovered on Saturday, October 16, by Dr. A. Schwassmann, astronomer at the Bergedorf Observatory near Hamburg, Germany. At that time it was in the constellation of Ophiucus, which can now be seen in the western sky shortly after sunset. The position of the comet, expressed in the celestial equivalent of latitude and longitude, was then 17 hours, 24 minutes, 52 seconds right ascension and 2 degrees, 32 seconds north declination. It is moving to the southeast, but is of the 14th magnitude, too faint to be seen except with a large telescope, and will probably not become bright enough to see without optical aid.

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GENERAL SCIENCE

The Dangers of a Fallacy

It is terrible to see how a single unclear idea, a single formula without meaning, lurking in a young man's head, will sometimes act like an obstruction of inert matter in an artery, hindering the nutrition of the brain, and condemning its victim to pine away in the fullness of his intellectual vigor and in the midst of intellectual plenty. Many a man has cherished for years as his hobby some vague shadow of an idea, too meaningless to be positively false. He has, nevertheless, passionately loved it, has made it his companion by day and by night, and has given to it his strength and his life, leaving all other occupations for its sake, and, in short, has lived with it and for it, until it has become, as it were, flesh of his flesh and bone of his bone; and then he has waked up some bright morning to find it gone, clean vanished away like the beautiful Melusina of the fable, and the essence of his life gone with it.—*Charles Sanders Peirce.*

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